

Environmental Project, 615, 2001

Environmental and Health Assessment of Substances in Household Detergents and Cosmetic Detergent Products

(see 6.1 in the following link

http://www2.mst.dk/common/Udgivramme/Frame.asp?pg=http://www2.mst.dk/udgiv/Publications/2001/87-7944-596-9/html/helepubl_eng.htm)

6.1 Betaines

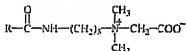
Betaines are primarily used in personal care products like, e.g. hair shampoos, liquid soaps, and cleansing lotions. Other applications include all-purpose cleaning agents, hand dishwashing agents, and special textile detergents. All betaines are characterized by a fully quaternized nitrogen. In alkyl betaines, one of the methyl groups in the 'betaine' structure (*N,N,N*-trimethylglycine) is replaced by a linear alkyl chain. A special type of betaines is the hydroxysulfobetaines in which the carboxylic group of alkyl betaine is replaced by sulfonate and a hydroxy-group is inserted in the hydrophilic part of the molecule. In alkylamido betaines, an amide group is inserted as a link between the hydrophobic alkyl chain and the hydrophilic moiety. The most commonly used alkylamido betaine is alkylamidopropyl betaine (e.g., cocoamidopropyl betaine), whereas alkylamidoethyl betaines are used in smaller amounts.

Representative structures of betaines are shown below.

Alkyl betaine



Alkylamidopropyl betaine



No data were found on the occurrence of betaines in the environment.